Summary tendrils

All spiral same — twisting either way — slight — with climbers when young & grown taller.—

[illegible], and highly organised tendril which [illegible] almost animals

Differences [illegible] | nothing of | [illegible] tendrils — then [illegible] [illegible] spiral contraction [illegible] clasping a formation of | [illegible] —

Anyone who did not understand the nature of the [illegible] of the t. would conclude that in the [illegible] [illegible] & [illegible] to [illegible], & in [illegible] of the [illegible] [illegible] [illegible] that the tendril would respond [illegible] [illegible] [illegible] that the [illegible] [illegible] [illegible] & [illegible] in [illegible] of [illegible] [illegible]. But in [illegible] of [illegible] [illegible] [illegible] together & [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible]; & in the [illegible] part of [illegible] [illegible] [illegible] together [illegible] the [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible], however, [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the.

There is [illegible] difference, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]; [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible], [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] of the [illegible]; but [illegible] it is not [illegible] [illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] & [illegible] [illegible], & [illegible] [illegible] [illegible] —

Big. mag. revol 2°. 6' — Twines.

B. unguis — also leaf-climber — Favourable conditions

B. venusta twines. 2° 15'

B. speciosa rev. to 4° 30'

B. capreolata 2°. 23' — moved in 10' — moves from light.?

Drives Remains contra

Eccremocarpus : 8°. 15' ‸ 1°. 13' — movement irregular. — petiole moves

Beautiful movement of hooks to surface

Splendid movement in Bignonia.

Cobaea 1°. 15' — not internodes. move — t. sensitive on all sides. — spiral contraction dragging on branches —

Pea 1°. 20' $\frac{1}{7}$ of a grain.

Lathyrus aphaca ~~not~~ the one reacting movement of internodes

internodes in 5°. —

Smilax — contact in 1° 20'

Corydalis — often under 30' to 42' — $\frac{1}{8}$ of grain — scarcely $\frac{1}{16}$.

but did not suffice for permanent flexure.

Echinocystis lobata — 1°. 40' — concave side ‸ [then sensitive] itself hooked

contracts in 1' or 2' — crawling onwards of caught tendril

$\frac{1}{16}$ of a grain

Vine 2°. 15' — leaves to dark

Cissus discolor tendrils 4° 30' to 5°. — contact in 4° or 5'!

$\frac{1}{4}$ of grain — {prolonged contact of main & footstalk & co with Echinocystis..

sensitive on both sides, so these movements —

Ampelopsis no movement of internodes or tendrils —

tendrils often nothing in 3° or 4°. — light — Dicc. cont.

Passiflora punctata t. in 3°. 5 — 2° 40 — then $\frac{1}{14}$ of grain

in 5' or 10' — O in 3° & 4°.

Tacsonia. — 5° & 5 20' — contact in 7'

Mohl   Tendrils
~~Palm~~ on ~~Twiners~~.

44 ~~Jasminum nudiflorum~~ X
& Paullinia winding stem & tendrils as in one of Sapindaceae.
37 gradation of leaves into tendrils

39 } Astragalus rudimentary tendrils No
50 }

39 Lygodium leaf climber

40 ~~Cocculus leaf-climber - Tropaeolum - Ophioglossum leaf climber.~~
41 ~~Utricularia like Gloriosa~~ – Nepenthes
— ~~Smilax stipules~~

43 Fumaria claviculata tips of branches converted into tendrils
48 Momordica ... – flower-peduncle into tendr.
— Sapindaceae -
— in Vine 47 Passiflora

49 Vanilla
52 ~~on winding of tendril spontaneous p 78.~~
57 tendrils circumnutate rapidly in length
59 ~~on spontaneous winding with rotation of self~~
63 ~~sensitiveness of t. touch does nothing!!~~
~~touch (to 10 (S. 65)~~

65 ~~curled side not sensitive~~ – Cucurbit & Passiflora

70 ~~Virginian creeper.~~ & slight
77 ~~V. creeper point to light & darkness – ... not affected~~
82. will wind on glass. tendril

Mohl on Twiners.

~~107} twisting cause of revolving movement~~
~~108}~~

111. no twisting of axis when plant twines round smooth support
& old twisting disappears

112 a plant already twisted cannot twine!!

~~do. stem [illegible]~~

~~115 Asclepias vincetoxicum twines~~ if [illegible] when it grows in [illegible] shady place

116 Experiment on ~~thick~~ odd supports, showing influence of light

~~119 Twiners care little for light. especially Ipomoea~~

~~125 others in right-hand manner~~

~~135 will not twine round very thick~~ support

135 Hooks in certain twiners, specially Ipomoea muricata

~~149 has seen axial twisting always in twin plants~~

Palm

8-11. some winding plants have C.

~~30 axial twisting variable~~

~~34 Hop leaves to same point~~

~~41 Asclepias nigra up twines in [illegible] side~~ ×

~~42 Ceropegia Gallium same~~

~~— Polygonum convolvulus (S. 94.)~~ ×

~~43 Periploca up the upper branches & — Solanum (Dulcamara)~~

~~Phaseolus [illegible]~~

55 Passiflora. hardly any — Vine do good fact. Cardiospermum good.

58 — Bean up (ordinarily or crossing)

58 cirri more like withers

60 winding of young cirri & subsequent growth

~~63 Linaria cirrosa — leaf-climber.~~

68 tips of tendrils make circles ⊙ from light.

93. no irritability in tendril — when plant ceases to grow loses movement

~~95 axial twisting continues as long as short stretches~~
~~96 & variable — in stem & convolvulus~~

98 Each internodium movements of independent

100 Direction of winding of tendrils depends on touching body

— cease moving when fully grown.—

Bull. Soc. Bot. de France. Tom V. 1858.
pa. [illegible]. Léon

351. Strong volubility variable

~~356 axial twisting variable ... of Phaseolus~~

680 discussion on reversed twisting of tendrils
when the 2 ends are attached; [?] whole length.

681. var. of Haricot with stem straight & volubile.
— Convolvulus batatas — twisting little through
are rarely volubile

Dutrochet. Comptes Rendus. 1843. Tom. 17.

p. 994 } Effect of temperature on movement of Pea.
996 }
996 Whether petiole moved, but did not time page
997 too much light checks movement.
998 effect of light on movement of Pea.

1001. revolution reversed rotation in Pea
1003 ascend movement in Bryony & Cucumis
1005 movement of tendril in t of Cucumber
1006 t of vine directed to darkness

on twisting Plants

Comptes Rendus 1844. Jan 19.

p 299 on X slight irritability of Solanum dulcamara
p 301 sensibility — do in Stipules of leaves.
303 Similar conclusion tiger which without any support

— Solanum requires to touch something to bend X

1864. Weights

Thread 50 miles = 1.25 gr.

10 — = 0.25 1/4

5 — = 0.125 1/8

2½ — 0.062 1/16.

Red String

50 miles = 8.2 gr.

10 — = 1.64

5 — = 0.82

1863

[illegible] weight

$$\frac{14}{100} = \frac{1}{7} \text{ [illegible]}$$

7)100 (14
7
30
28
2

14
7
98

2

70
28
98

~~p. 39 Lyzgen~~

p. 112 Spencer Theory
non-chivalry – Flint – occasionally chivalry

~~125~~

1 . 8½ lists